# GREAT LAKES WATER QUALITY BOARD

## POSITION STATEMENT

## ON THE FUTURE OF GREAT LAKES

## REMEDIAL ACTION PLANS

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# Introduction

It has been over ten years since the Parties and Jurisdictions committed to the development and implementation of Remedial Action Plans (RAPs) to restore all uses in Great Lakes Areas of Concern. Recently, federal, state, and provincial budget constraints have resulted in less support for RAPs and public advisory committee (PAC) activities. Further budget cutbacks are anticipated. Numerous RAP stakeholders and many PACs have indicated that further progress will be difficult. In light of the fact that the Great Lakes Water Quality Board (WQB) was the originator of RAPs, that the WQB is the principal advisor to the International Joint Commission (IJC) on water quality matters, that the WQB is charged with assessing the adequacy and effectiveness of Great Lakes programs, and in response to concern for recent government cutbacks in RAP funding, the WQB has prepared this position statement on the future of RAPs based on its practical experiences over the last 11 years. This WQB position statement will review the history of RAPs, address current RAP funding concerns, and provide practical advice on sustaining RAP processes and ensuring continued progress toward the goal of restoring all uses in Areas of Concern.

# Water Quality Board Historical Perspective on RAPs

The concept of RAPs originated from a 1985 recommendation of the WQB (WQB 1985). The WQB found that despite implementation of regulatory pollution control programs, a number of beneficial uses (e.g., unrestricted human consumption of fish, successful reproduction of certain sentinel wildlife species, fish and wildlife habitat) were not being restored, and recommended that comprehensive and systematic RAPs be developed and implemented to restore all beneficial uses in Areas of Concern.

The 1987 Protocol amending the Great Lakes Water Quality Agreement (GLWQA) formalized the RAP program and explicitly defined Areas of Concern as specific geographic areas that fail to meet the general or specific objectives of the GLWQA where such failure has caused or is likely to cause impairment of beneficial use or of the area's ability to support aquatic life (United States and Canada 1987). Impairment of beneficial use means a change in the chemical, physical, or biological integrity of the Great Lakes ecosystem sufficient to cause any of 14 use impairments:

- restrictions on fish or wildlife consumption;
- tainting of fish and wildlife flavor;
- degradation of fish and wildlife populations;
- fish tumors or other deformities;
- bird or animal deformities or reproductive problems;
- degradation of benthos;

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**This new process will call upon a wide array of programs, far beyond those traditionally associated with water pollution control, including the involvement of local communities and a wide range of government agencies at all levels.**

- restrictions on dredging activities;
- eutrophication or undesirable algae;
- restrictions on drinking water consumption, or taste and odor problems;
- beach closings;
- degradation of aesthetics;
- added costs to agriculture or industry;
- degradation of phytoplankton and zooplankton populations; or
- loss of fish and wildlife habitat.

Annex 2 of the GLWQA states that RAPs shall embody a systematic and comprehensive ecosystem approach to restoring and protecting uses in AOCs (United States and Canada, 1987). In addition, the GLWQA states that the Parties, in cooperation with State and Provincial Governments, shall ensure that the public is consulted in all actions undertaken pursuant to RAPs.

In its 1987 Report on Great Lakes Water Quality, the WQB (1987) concluded:

> "The development of RAPs represents a challenging departure from most historical pollution control efforts. Previously, separate programs for regulation of municipal and industrial discharges, urban runoff, and agricultural runoff were implemented without considering overlapping responsibilities or whether the programs would be adequate to restore all beneficial uses. This new process will call upon a wide array of programs, far beyond those traditionally associated with water pollution control, including the involvement of local communities and a wide range of government agencies at all levels. All programs, agencies, and communities affecting an Area of Concern must work together on common goals and objectives in the RAP to assure its successful implementation."

In its 1989 Report on Great Lakes Water Quality, the WQB (1989) concluded:

- It is taking longer than expected to develop and implement RAPs because of the complexity of the problems and solutions in Areas of Concern, a commitment to public participation, and the problems of achieving successful institutional arrangements and communication.

- Public expectations are high.

- Available resources are limited.

- The evolution of RAPs toward integrated resource management is positive and consistent with the ecosystem approach.

- To sustain remedial efforts and maintain the momentum for remediation will require building a record of success.

- The success of RAPs is dependent on the ability to demonstrate progress in order to sustain public confidence and support.

In 1991, the WQB, U.S. Environmental Protection Agency (EPA), and Environment Canada sponsored a workshop on "RAPs: Content and Key Issues." Important findings from this workshop (WQB, U.S. EPA, and Environment Canada 1991) included:

- The process by which a RAP is developed is as important as its content. Although there is no obvious single best approach, it is clear that a successful process will: be integrative; work to achieve a planned, agreed-upon and flexible roadmap to restoration; and provide evidence of commitment and continuing accountability. Stakeholder and public involvement are essential for success.

- Innovation and creativity are encouraged in RAP development processes.

- Each RAP must identify the key actions, sequencing, timeframe, and responsibilities in order to eliminate uncertainty in remediation. As part of this process, it is important to achieve broad-based agreement on benchmarks, indicators, and endpoints in order to celebrate progress and sustain momentum.

- The agency primarily responsible for preparing a RAP is not solely responsible for implementing it. The mandates of the lead agency should not restrict the RAP planning effort from properly addressing relevant issues.

- There is a need to recognize the iterative and ongoing nature of RAPs. Full commitments may need to be obtained through a step-wise process.

**It must be acknowledged that RAPs require a long-term commitment in order to restore beneficial uses, and that RAPs are a learning process for everyone. The Water Quality Board considers that RAPs are a two-track process: 1) acceleration of existing programs; and 2) identification of the schedule and sequencing of actions beyond programs in order to fully restore beneficial uses.**

In 1991 the WQB also published a report entitled "Review and Evaluation of the Great Lakes Remedial Action Plan Program." Conclusions included (WQB 1991):

> "It must be acknowledged that RAPs require a long-term commitment in order to restore beneficial uses, and that RAPs are a learning process for everyone. The Water Quality Board considers that RAPs are a two-track process: 1) acceleration of existing programs; and 2) identification of the schedule and sequencing of actions beyond programs in order to fully restore beneficial uses. Planning and implementation proceed simultaneously. However, implementation of remedial actions remains the primary priority. RAPs are the best tool to integrate the principles of the Great Lakes Water Quality Agreement and implement the ecosystem approach at the grassroots level in the Great Lakes basin. Substantial progress is being made in implementing a multi-institutional, multiple-use, ecosystem approach through RAP institutional structures and through expediting and accelerating implementation of existing regulatory and resource management programs. Further, RAPs enable decision-makers to focus new funds and redirect ongoing activities towards those

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solutions that will best address the most critical needs. RAPs are providing compelling rationale at a time of competitive bidding for limited funds, and are furnishing legislators with motives and arguments for enhancing cleanup efforts through new statutory authorities and budget appropriations. What is needed now is continuity of purpose, sustained public involvement, political will to restore Areas of Concern, emphasis on coalition-building, and the resources to do the job."

In 1994, the Parties prepared a binational progress report on RAPs (Environment Canada and U.S. Environmental Protection Agency 1994) and concluded, among other things, the following:

> "RAP processes are most effective if they are mission-driven (i.e., a focus on ecosystem results and restoring uses) and not rule-driven. Successful RAP processes empower institutional structures to pursue their mission of restoring impaired uses. Empowerment of RAP institutional structures can be demonstrated by: a focus on watersheds or other naturally-defined boundaries to address upstream causes and sources, and obtain commitments from within the watershed for implementation; an inclusive and shared decision-making process; clear responsibility and sufficient authority to pursue the mission; an ability to secure and pool resources according to priorities for action using nonprofit organizations or other creative mechanisms; flexibility and continuity in order to achieve an agreed-upon road map to use restoration; commitment to broad-based education and public outreach; and an open and iterative RAP process that strives for continuous improvement."

The Parties recognized the challenges of RAPs and also concluded the following in 1994:

> "While the ultimate success of a RAP is measured by beneficial use restoration, including biological recovery, the critical content of RAPs consists of clear identification of a limited number of key action steps that are essential to recovery. The process of identifying those high priority actions and gaining support for their implementation lies at the heart of the RAP process. This process of involving stakeholders and securing broad-based support is at least as important as the technical and scientific aspects of RAPs. To sustain momentum in restoring uses in Areas of Concern, it is important to recognize progress at several levels which are intermediate to the ultimate purpose of use restoration. For example, these intermediate indicators of progress can consist of reductions in stresses such as chemical concentrations in the environment or pollutant discharges to it, or even program actions which will lead to such reductions."

# RAP Funding Concerns and Opportunities for RAPs

**The WQB recognizes that greater emphasis needs to be placed on building strong partnerships with effective local leadership.**

The WQB recognizes that much has been accomplished through RAPs and yet much needs to be done to fulfil the GLWQA goal of restoring all beneficial uses in Areas of Concern. The erosion of governmental funding support for RAPs is real. Budget constraints have impacted most Great Lakes programs. However, with such budget constraints comes an opportunity to re-evaluate how RAPs have been developed and implemented, and to look for ways to form partnerships, pool resources, compensate for program restraint measures, and still accomplish the important goals of restoring uses in Areas of Concern.

Based on the WQB's basin-wide, practical experiences in the RAP program, RAP processes are most effective if they are mission-driven (i.e., a focus on ecosystem results and restoring uses) and not rule-driven. For RAPs to be successful, they must:

- be cleanup- and prevention-driven, and not document-driven;
- make existing programs and statutes work;
- cut through bureaucracy;
- establish priorities on a local basis and work to elevate those priorities within state, provincial, and federal governments;
- ensure strong community-based planning processes;
- streamline the critical path to use restoration; and
- be an affirming process.

Indeed, there are many examples of RAPs that demonstrate these attributes. Examples of successful RAPs are presented in Table 1. RAPs are a leader in implementing ecosystem-based management and watershed management. Rochester Embayment (New York), Collingwood Harbour (Ontario), Rouge River (Michigan), and Hamilton Harbour (Ontario) are practical examples of where the watershed was adopted as the primary unit for management early on in the RAP process. This watershed focus and strong partnerships and effective local leadership have been instrumental in achieving success.

The WQB recognizes that greater emphasis needs to be placed on building strong partnerships with effective local leadership. Municipalities, conservation authorities, counties, watershed councils, industries, and other local institutions should play a greater role in RAP processes. It is important to note that nonprofit organizations have been very successful in securing resources to sustain RAP processes in many Areas of Concern. However, the federal, state, and provincial

governments must not walk away from the RAP process. Federal, state, and provincial governments must continue to:

- provide resources to facilitate RAP processes;
- implement high priority remedial and preventive actions as called for in RAPs and within the programmatic responsibilities of the agencies;
- provide technical resource support for identification and implementation of additional remedial and preventive actions necessary to fully restore beneficial uses;
- facilitate networking among RAP stakeholders and linkages with lakewide management plans (LAMPs); and
- encourage and facilitate partnership and leadership development at the local level.

Table 1. Selected examples of successful RAPs, with corresponding strengths and major accomplishments.

| REMEDIAL ACTION PLAN | STRENGTHS AND ACCOMPLISHMENTS |
|---|---|
| Collingwood Harbour (Ontario) | Restoration of four beneficial uses and delisting as an Area of Concern; optimizing phosphorus removal at local water pollution control plant; demonstration of innovative sediment removal technology; incorporating RAP principles into Collingwood's Official Plan; implementing a comprehensive pollution prevention program called "The Greening of Collingwood;" projects to stabilize shorelines and enhance habitat |
| Rouge River (Michigan) | Watershed focus; Rouge RAP Advisory Council; Friends of the Rouge; annual Rouge Rescue; Rouge River National Wet Weather Demonstration Project; $1 billion in infrastructure improvements to address combined sewer overflows; urban nonpoint source control projects; strong community support and involvement |
| Hamilton Harbour (Ontario) | Restoration of one beneficial use; Bay Area Implementation Team; Bay Area Restoration Council; demonstration of sediment removal and treatment technologies; a five-year $19 million effort to rehabilitate habitats; expansion and upgrading of sewage treatment plants; pollution prevention at industries; strong linkages among research, assessment, and management; involvement of elected officials |

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|---|---|
| Waukegan Harbor (Illinois) | A $21 million settlement to remove, treat, and dispose PCB-contaminated sediments; substantial reductions in PCB contamination of the fishery as a result of sediment remediation; Waukegan Harbor RAP Citizens Advisory Group; Friends of the Waukegan River; strong community-based partnership; remedial actions to contain and remove contaminants at three industrial facilities |
| Nipigon Bay (Ontario) | Three beneficial uses restored; Nipigon Bay RAP Public Advisory Council; strong support from Lake Superior Programs Office; extension of Area of Concern to address entire watershed; linkages to and implementation of the Nipigon River Water Management Plan; a $2.8 million habitat rehabilitation project; incorporation of habitat components into Red Rock Marina; implementation of secondary treatment at Domtar facility |
| Cuyahoga River (Ohio) | Cuyahoga River RAP Coordinating Committee and Cuyahoga River Community Planning Organization are equal partners in RAP development and implementation; strong linkages to municipalities and industries; strong linkages among research, monitoring, and management; collaborative research and monitoring programs for water quality, sediments, and fish contaminants; modelling efforts to support selection of remedial actions; identification of highly eroding sites and use of volunteers to stabilize streambanks; increasing public access; strong public outreach and broad-based community awareness of RAP |
| Severn Sound (Ontario) | A unique partnership among the Severn Sound RAP Public Advisory Council, the RAP Team, and the Wye Marsh Wildlife Centre; strong public outreach and RAP visibility; habitat rehabilitation projects; expansion and upgrading of sewage treatment plants; nonpoint source control projects; strong assessment and monitoring efforts |
| Rochester Embayment (New York) | Monroe County is the lead agency for RAP development, with value-added support provided by New York State Department of Environmental Conservation; a watershed-based planning process; combined sewer overflow control measures; implementation of best management practices; Irondequoit Bay Oxygen Supplementation Project; considerable community outreach and public involvement |
| Green Bay (Wisconsin) | Strong RAP institutional structure, including Northeast Wisconsin Water for Tomorrow, Inc.; upgrading and pollution prevention at Green Bay Metropolitan Sewerage District; research support for targeting remedial actions; Green Bay Mass Balance Study; nonpoint source control programs; walleye habitat rehabilitation; wetlands preservation and creation; improving public access; considerable public awareness and participation |
| Ashtabula River (Ohio) | Ashtabula RAP Public Advisory Council; Ashtabula River Partnership for sediment remediation; 1993 interim dredging project conducted; pilot scale demonstration of thermal desorption process for sediment remediation; combined sewer overflow and discharge improvements; strong public involvement and community education |

| REMEDIAL ACTION PLAN | STRENGTHS AND ACCOMPLISHMENTS |
|---|---|
| Thunder Bay (Ontario) | Thunder Bay RAP Public Advisory Council; strong support from Lake Superior Programs Office; linkages to and partnerships with City of Thunder Bay; a $5.3 million habitat rehabilitation project; improvements in Kaministiquia River water quality as a result of achievement of secondary treatment at mills |
| St. Louis River/Bay (Minnesota-Wisconsin) | St. Louis River System RAP Citizen Advisory Committee; effective institutional structure (four technical work groups and an institutional arrangements committee); strong community outreach and support for RAP; nonpoint source pollution control projects; habitat preservation projects; cleanup of contaminated sites |
| Bay of Quinte (Ontario) | Bay of Quinte RAP implementation advisory committee and local implementation steering committee; strong linkages among modelling, research, and management; reduced phosphorus loadings to Bay, decreased phosphorus levels in Bay, and a decrease in algal biomass (yet still demonstrates high variability); expansion of nonpoint source control efforts; stream and habitat rehabilitation efforts; strong public outreach; high visibility for RAP |
| Buffalo River (New York) | Buffalo River RAP Remedial Advisory Committee; Friends of the Buffalo River; strong linkages to community and county; strong monitoring and research efforts; inactive hazardous waste site remediation; habitat rehabilitation projects; public participation and awareness |
| Black River (Ohio) | Black River RAP Coordinating Committee; Seventh Generation (nonprofit organization); cleanup of PAH-contaminated sediments in river under an industrial settlement; sewer discharge controls/improvements; stormwater and other nonpoint source control efforts; strong monitoring program; effective public education and outreach |
| Menominee River (Wisconsin-Michigan) | Menominee River Citizens' Advisory Committee; effective cooperation between stakeholders from Wisconsin and Michigan; effective local leadership; public outreach; cleanup of paint sludge problem in bay; progress in implementation of Consent Agreement with company responsible for arsenic contamination |
| Milwaukee Estuary (Wisconsin) | Strong RAP institutional structure; broad-based public awareness of RAP; Milwaukee Metropolitan Sewerage District's combined sewer overflow control program; Greater Milwaukee Toxics Minimization Task Force; nonpoint source control programs; remediation of a PCB-contaminated sediments site |

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|---|---|
| Maumee River (Ohio) | Maumee River RAP Implementation Committee; partnership with Toledo Metropolitan Area Council of Governments; reductions is agricultural and urban runoff as a result of nonpoint source control programs; community-based RAP projects to build support and sustain momentum |
| St. Clair River (Ontario-Michigan) | St. Clair River RAP Binational Public Advisory Council; Friends of the St. Clair River; strong committee structure (four task teams and several sub-committees); agreement on binational, quantitative "yardsticks" to measure progress; process changes and "river separation" projects at industries; sewer upgrades and improvements; partnership with St. Clair River Waterways for Wildlife Project; habitat rehabilitation projects; public education and outreach |
| Muskegon Lake (Michigan) | Muskegon Lake RAP Public Advisory Council; partnership with Lake Michigan Federation and Muskegon County Soil Conservation Service; seed money to initiate RAP process; local leadership and control; local RAP coordinator; involvement of public in outreach and actions; agreement on concrete, specific recommendations for short- and long-term actions; adoption of basin-wide approach; use of a LakeWatch program to monitor water quality - this program uses citizens to collect scientifically-defensible data for use in the RAP process (the program won the national Local Environmental Hero Award from the U.S. National Oceanic and Atmospheric Administration); an aquatic habitat rehabilitation project on Cedar Creek |
| White Lake (Michigan) | White Lake RAP Public Advisory Council; partnership with Lake Michigan Federation and Muskegon County Soil Conservation Service; seed money to initiate RAP process; local leadership and control; local RAP coordinator; involvement of public in outreach and actions; agreement on short- and long-term actions; adoption of basin-wide approach; use of a LakeWatch program to monitor water quality - this program uses citizens to collect scientifically-defensible data for use in the RAP process (the program won the national Local Environmental Hero Award from the U.S. National Oceanic and Atmospheric Administration); a project to stabilize streambanks and enhance habitats along main branch of White River and Carlton Creek |

Many factors have contributed to Ohio's successful RAP program, including community empowerment, enthusiastic leadership, and strong partnerships (Table 2). The need for strong partnerships and effective local leadership is precisely the message delivered by RAP stakeholders at Michigan's 1995 Citizens' Conference on Great Lakes Areas of Concern (Table 2). In addition, the need for strong partnerships and effective local leadership is a critical component of U.S. Environmental Protection Agency's new "Watershed Approach." This "Watershed Approach" calls for creative, comprehensive solutions based on three key elements: a focus on watersheds or other natural boundaries; continuous improvement based on sound science; and strong partnerships and meaningful stakeholder involvement. In Canada, the Canada-Ontario Agreement has proven to be an excellent institutional mechanism to formalize, deliver, and sustain federal and provincial program support for RAPs.

Table 2. Keys to successful RAPs as identified in Ohio and Michigan.

| FACTORS WHICH HAVE RESULTED IN A SUCCESSFUL RAP PROGRAM IN OHIO | KEYS TO SUCCESSFUL RAPS AS IDENTIFIED AT MICHIGAN'S 1995 CITIZENS' CONFERENCE ON GREAT LAKES AREAS OF CONCERN |
|---|---|
| • Empowering local communities with Ohio Environmental Protection Agency as an equal partner<br>• Participation of professional planners<br>• Top-down commitment<br>• Keeping RAP needs and accomplishments high profile<br>• Creating a separate identity<br>• Staff enthusiasm, dedication, and creativity<br>• Volunteer enthusiasm, dedication, and creativity<br>• Developing partnerships with existing programs<br>• Constant communication at all levels<br>• Extensive efforts to seek funding<br>• Setting milestones to encourage enthusiasm, rather than unrealistic goals that generate distrust and pessimism<br>• Strategic planning<br>• Numerous efforts to keep the public informed, aware, and involved<br>• Keeping state and U.S. elected officials apprised of RAP efforts | • Local leadership<br>• RAPs should empower communities to make decisions for themselves and to set their own environmental agenda<br>• PACs should include representation from all sectors of the community<br>• Partnerships will be the key to generating the resources necessary to implement RAPs<br>• Local governments and agencies are major stakeholders that can help move RAPs forward<br>• Resources needed to implement RAPs will have to be found by ourselves, they won't be given to us<br>• Elected officials and agency heads must hear that RAPs are important to residents<br>• RAP issues should be framed and communicated so they are relevant to the local community and meaningful to the people who live there<br>• Honor commitments to the GLWQA<br>• The biggest barrier facing RAPs is institutional arrangements and institutional barriers can be overcome by leadership<br>• Empowerment comes from within; get involved and make a difference. Just do it! |

The WQB recognizes that research and assessment programs have been instrumental in helping to direct remedial and preventive management programs. For example, most successful RAPs have strong research and assessment programs as part of the foundation for implementing locally-designed ecosystem approaches to restoring beneficial uses and for practicing adaptive management (i.e., assess, set priorities, and take action in an iterative fashion). Indeed, research for RAPs has proven to save money while achieving positive ecosystem results (Table 3). Research and assessment programs must be coupled to management efforts in RAPs in order to sustain the process of setting priorities for implementing remedial and preventive actions to fully restore uses.

Clarity in roles and responsibilities in RAPs is also essential. PACs and other RAP institutional structures must be given clear leadership responsibilities commensurate with the need to develop strong local partnerships and meaningful stakeholder involvement. Indeed, where RAPs are successful, PACs or other RAP institutional structures have had the role of equal partner in RAP development and implementation, and not just an advisory role. PACs and RAP institutional structures should be given clear charges and responsibilities to: help implement an ecosystem approach and watershed management; ensure broad-based public participation and outreach; help coordinate and facilitate further RAP development and implementation; help form partnerships and secure resources, commitments, and endorsements; audit RAP implementation, track progress, and publish RAP progress reports; and help build the institutional capacity to restore all beneficial uses.

Again, many RAPs are already achieving this and are on the "cutting edge" of implementing watershed management and using an ecosystem approach as called for in the GLWQA. RAP implementation and watershed management can continue to thrive with strong local leadership and initiative, despite reductions in government funding.

The WQB is in the unique position to help sustain the RAP process. The RAP process was created to ensure sufficient accountability to restore beneficial uses. WQB members, serving in their personal and professional capacities, created the RAP process in order to ensure a logical sequence of problem solving and resolution, and ensure an adequate scientific information base for management actions in Areas of Concern. Prior to development of the RAP process, the WQB reported that it was not always clear on how to track and measure progress in Areas of Concern or how to remove one from the list.

The WQB concludes that it is now as important as ever to ensure: a critical path to use restoration in Areas of Concern; an adequate scientific information base for management actions; and sufficient accountability. The WQB reminds all stakeholders that Areas of Concern were not created in a few years and many Areas of Concern will not be restored in a few years. What is needed is a step-wise approach to use restoration and demonstration

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Table 3. Examples of how research has moved RAP processes forward and achieved cost-and ecosystem-effective results.

| RAP | EXAMPLE OF CONTRIBUTION FROM RESEARCH |
|---|---|
| Collingwood Harbour (Ontario) | Research in load reduction models and treatment processes was used to optimize phosphorus removal at the Collingwood Sewage Treatment Plant. This resulted in restoring impaired beneficial uses (cultural eutrophication) and resulted in a $9.4 million cost savings, representing a win-win situation for the environment and economy. |
| Green Bay (Wisconsin) | Research on mass transfer of pollutants and load reduction models identified the most cost- and ecosystem-effective strategy for remediation of contaminated sediment "hot spots." This resulted in progress in use restoration and economic savings, representing a win-win situation for the environment and economy. |
| Hamilton Harbour (Ontario) | Applied research on the relationship between loss of habitat and the structure and function of the Hamilton Harbour ecosystem has enabled the leveraging of $19 million from public and private partners to test and implement habitat rehabilitation techniques. This project will: rehabilitate 250 ha of marsh in Cootes Paradise; enhance the pike spawning marsh in Grindstone Creek; improve the littoral habitat in Hamilton Harbour; rehabilitate the littoral fish community; and provide nesting and loafing sites for colonial waterbirds. |
| Black River (Ohio) | Research on the cause-and-effect relationship between PAH-contaminated sediments and liver tumors in the brown bullhead population led to agreement on a settlement with USS-KOBE Steel Company to remove over 38,230 $m^3$ of PAH-conatminated sediments from the river and upland disposal of dredged sediments in a secure landfill on company property. |
| Nipigon River (Ontario) | Research on the role of water level fluctuations in restoring the fishery resulted in agreement on and implementation of the Nipigon River Water Management Plan. This will benefit the upstream spawning success of walleye and brook trout previously affected by water level fluctuations resulting from hydro-electric power generation. |

of incremental progress in order to sustain the RAP process. Progress needs to be achieved, documented, and celebrated in a step-wise fashion. Both short- and long-term milestones must be celebrated. Examples of milestones include: commitments and endorsements for actions; innovative partnership agreements; creative funding solutions; governmental and private sector management actions; remedial and preventive actions by industries and municipalities; changes in discharge quality; reductions in contaminant loadings; changes in air/water/sediment concentrations; reductions in bioaccumulation rates; preservation or rehabilitation of critical habitats or biodiversity; biological recovery; use restoration; and improved suitability for human use of resources. The point is to measure and celebrate progress at many levels in order to sustain momentum for long-term use restoration.

**What is needed is a step-wise approach to use restoration and demonstration of incremental progress in order to sustain the RAP process.**

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**The Parties and Jurisdictions, and the IJC, must not abandon RAPs.**

The WQB recognizes the importance of the contaminated sediments issue to most Areas of Concern (i.e., all 42 Areas of Concern have contaminated sediments based on application of chemical guidelines) and that this has been identified as a universal obstacle in RAPs. The WQB is pleased that this issue has been targeted as an IJC priority. The WQB has established a Sediment Priority Action Committee to address major obstacles to sediment remediation (e.g., regulatory complexity and barriers, funding) and to articulate a step-wise, incremental approach to problem resolution. A current perception is that it is "all or nothing" in terms of remediation of contaminated sediments. The WQB will be developing a white paper on this subject and will be convening a joint meeting with the IJC, members of the Sediment Priority Action Committee, and other stakeholders on how to: move forward in a step-wise, incremental approach on the contaminated sediments issue; increase public understanding; and ensure follow-up on implementation of recommended pragmatic actions.

# Concluding Remarks

RAPs provide the framework to restore and sustain healthy ecosystems and communities. The RAP process draws on community members to develop a collaborative vision for a healthy ecosystem in the 42 Areas of Concern. The ecological, economic, and societal factors affecting each area should drive the problem-solving approach, involving citizens in setting environmental goals, and monitoring and evaluating outcomes over time.

The WQB concludes that RAPs are on the cutting edge of community-based and ecosystem-based management processes. The RAP process is out in front in how to address local, environmental problems and is precedent setting for other regions and areas.

RAP implementation and continued progress toward watershed and ecosystem-based management can and must continue to thrive with strong local leadership and initiative, despite reductions in some state, provincial, and federal programs. The Parties and Jurisdictions, and the IJC, must not abandon RAPs. Further, it is becoming well recognized that for LAMPs to be successful, RAPs will have to be successful. It is paramount that the federal, state, and provincial governments

**Continued emphasis should be placed on measuring and celebrating incremental progress and striving for continuous improvement in the RAP process.**

continue to provide leadership and resources to fulfil commitments to RAPs as articulated in the GLWQA. In addition, governments should be viewed as facilitators of RAPs and partnership builders.

Based on a basin-wide review of the Great Lakes RAP Program, the WQB concludes the following:

- there has been considerable progress in most RAPs and one Area of Concern has been delisted (i.e., Collingwood Harbour);
- although progress is being achieved, it is not as fast as hoped for and contaminated sediments remain a significant obstacle in many Areas of Concern;
- greater emphasis should be placed on celebrating and marketing successes achieved over the last ten years;
- there is a need to obtain broad-based acceptance of a step-wise approach to use restoration and demonstration of incremental progress in order to sustain the RAP process (demonstration of progress will be essential to sustain RAPs);
- identification of key actions and delineation of sequencing, timeframe, and responsibilities will be essential to ensure accountability for action;
- government agencies are not solely responsible for implementing RAPs and nongovernmental partners are essential implementors of RAPs;
- continued emphasis should be placed on planning cooperatively and sharing responsibilities for delivery of programs;
- a high priority should be building partnerships with municipalities, conservation authorities, counties, watershed councils, industries, and other local organizations and institutions;
- governments must continue to provide resources and technical assistance to facilitate RAPs (these investments of resources often result in substantial leveraging of nongovernmental and private sector resources);
- a high priority should be placed on identifying creative financing strategies for RAPs (this is an important area where IJC can play a value-added role in RAPs);
- coupling of research and management has proven time and again to be cost- and ecosystem-effective; and
- continued emphasis should be placed on measuring and celebrating incremental progress and striving for continuous improvement in the RAP process.

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